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**COMPLETE SPECIFICATION**

**DRAWINGS ATTACHED**

**Improvements in or relating to Electric Dry Shavers**

We, SIEMENS-SCHUCKERTWERKE AKTIEN-GESELLSCHAFT, a German Company, of Berlin and Erlangen, Germany, do hereby declare the invention, for which we pray  
5 that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

When using dry shavers it is often desirable to be able to operate the cutting device at different cutting speeds, according to the length of the hairs to be cut. It is known to provide dry shavers the working speed of which can be varied. In the case of other  
15 known dry shavers, one or more rotating cutters are arranged below a stationary circular foil screen in such manner that the cutting speed at the edge of the screen is higher than towards the centre thereof.  
20 With such shavers it is also known to provide foil screens which are not perforated over their entire area but are formed in such a manner with holes or slots of different size or width that the foil screens have annular  
25 concentric zones of different hole size. This also permits working with different cutting speeds.

Shavers operating with a reciprocating cutter are known, and it is also known to  
30 provide a shaver with two different cutting devices, each having a reciprocating cutter, the two cutting devices being so constructed that one device is more suitable for short hair and the other device more suitable for longer hairs. For example it is known to construct the two cutting devices as a foil screen-type cutting head and a comb-type cutting head respectively.

A foil screen-type cutting head may be defined as a cutting head including a very thin plate formed with a plurality of small perforations such that central perforations are surrounded on all sides by other in-

dividual perforations, there being an inner cutter arranged to move against the inner face of the plate. A comb-type cutting head may be defined as a cutting head having an outer member formed with parallel, longitudinally-extending slits between which are left parallel teeth, there being an inner cutter arranged to move against the inner face of the outer member in a direction transverse to the length direction of the teeth in the outer member.

It is an object of the invention to make it possible to operate shavers having a foil screen-type cutting head and a comb-type cutting head at different cutting speeds. It would be conceivable, for this purpose, to provide a separate drive for each of the two cutting devices and to operate these two drives with different frequencies of reciprocation, but this is cumbersome and expensive.

According to the invention there is provided a dry shaver having a first cutting head in the form of a foil screen-type cutting head (as hereinbefore defined), having a reciprocating inner cutter and serving to cut relatively short hairs and also having a second cutting head, in the form of a comb-type cutting head (as hereinbefore defined), which also has a reciprocating inner cutter and which serves to cut longer hairs, the speed of the inner cutter of the first head being higher than the speed of the inner cutter of the second head, the two heads being coupled to a common drive by respective power transmission means having differing transmission ratios, the two heads further being so disposed relative to one another that they can be applied simultaneously to the skin when the shaver is in normal use. By reason of the two heads being coupled to a common drive by respective power transmission means having differing

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transmission ratios, the cutting speeds of the two cutting heads can be adapted in a very simple manner to the optimum method of operation of the two types of head.

- 5 There are many possibilities for the construction of such power transmission means with different transmission ratios, and some particularly simple and advantageous embodiments will be described with reference to Figures 1 to 3.

10 In Figure 1, toothed wheel gearing is used as power transmission means. The drawing shows an inner cutter 1 of a foil screen-type cutting head and an inner cutter 2 of a 15 comb-type cutting head. As can be seen from the drawing, the construction is such that the two cutting heads can be simultaneously applied to the skin when the shaver is in normal use, so that both heads function at the same time. A common drive 20 3 serves to drive both cutters. Two gear wheels 41A and 42A are mounted on the driving shaft and they engage gear wheels 41B and 42B which carry cranks 51 and 52 25 respectively. The cranks 51 and 52 engage in crank slots 61 and 62, whereby the two cutters 1 and 2 are moved along lines perpendicular to the plane of the paper. As will be seen from the drawings, the two toothed wheel gearings 41A, 41B and 42A, 42B have 30 different transmission ratios from one another, so that the cutter 2 operates at a slower speed than the cutter 1.

35 In the dry shaver shown in Figure 2, lever transmissions having lever arms of differing lengths have been provided as power transmission means. The parts 1 to 3 are the same as in Figure 1. A cam 31 arranged on the shaft of the drive 3 actuates a slotted 40 link 32 which is fixed on one arm 73 of a pivotally mounted three-armed lever 71/72/73. The two arms 71 and 72 are connected to the two cutters 1 and 2. The lengths of the two arms 71 and 72 differ 45 from one another, so that the transmission ratios of the two lever transmissions differ from one another. In this case also the cutter 2 operates at a lower speed than the cutter 1.

50 In Figure 3, a double-cam transmission has been provided as power transmission means. Connected to the shaft of the drive 3 are two cam discs 81 and 82, which re-

ciprocate the two links 91 and 92 in the direction indicated by the arrows. Since the 55 diameters of the two cam discs 81 and 82 and therefore their eccentricity, differ from one another, the two links 91 and 92, and therefore also the cutter 1 and 2 connected to the links, operate at different speeds, the 60 cutter 1 being the faster.

#### WHAT WE CLAIM IS:—

1. A dry shaver having a first cutting head, in the form of a foil screen-type cutting head as hereinbefore defined, having a 65 reciprocating inner cutter and serving to cut relatively short hairs and also having a second cutting head in the form of a comb-type cutting head as hereinbefore defined, which also has a reciprocating inner cutter 70 and which serves to cut longer hairs, the speed of the inner cutter of the first head being higher than the speed of the inner cutter of the second head, the two heads being 75 coupled to a common drive by respective power transmission means having differing transmission ratios, the two heads further being so disposed relative to one another that they can be applied simultaneously to the skin when the shaver is in normal use. 80

2. A dry shaver as claimed in claim 1, wherein toothed wheel gearings of differing transmission ratios are provided as the two power transmission means.

3. A dry shaver as claimed in claim 1, 85 wherein the reciprocated inner cutters of the two heads are attached to the ends of respective lever arms of differing lengths, the two lever arms being arranged to reciprocate at the same angular velocity so that the two 90 cutters move at differing speeds.

4. A dry shaver as claimed in claim 1, wherein two cams of differing throw are mounted on a common shaft and are used to reciprocate the inner cutters of the respective 95 cutting heads.

5. A dry shaver substantially as hereinbefore described with reference to any one of Figures 1 to 3 of the accompanying drawings. 100

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*This drawing is a reproduction of  
the Original on a reduced scale.*

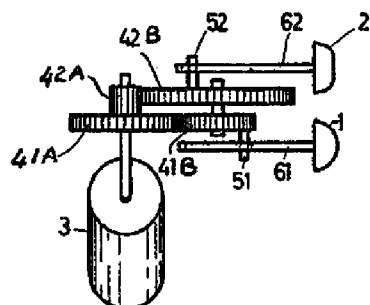


FIG. 1

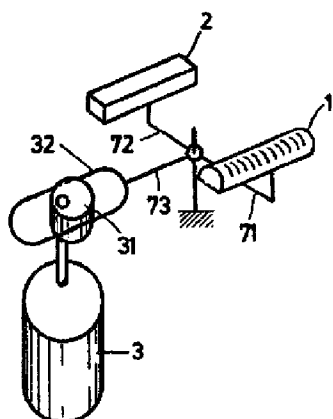


FIG. 2

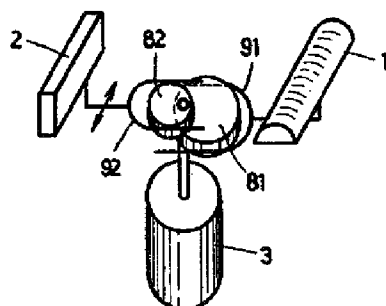


FIG. 3